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Attorney Docket No. 108298638US
Disclosure No. 01-0431

Amendments to the Claims:

Please cancel claims 27-49 without prejudice to pursuing these claims in a continuation, divisional, continuation-in-part, or other application. Following is a complete listing of the claims pending in the application, as amended:

1. (Withdrawn) A method of preparing microelectronic components, comprising:

applying an adhesive layer on at least a portion of a rear surface of a microelectronic wafer, the adhesive layer having a first surface in contact with the rear surface of the wafer and a second surface oriented away from the wafer;

defining a plurality of separable, spaced-apart adhesive pads within the adhesive layer;

contacting the second surface of the adhesive layer with a mounting member;

dicing the wafer into a plurality of microelectronic components, each microelectronic component having a back surface to which at least one of the adhesive pads is attached; and

separating the microelectronic components and their attached adhesive pads from the mounting member, leaving a remainder of the adhesive layer.

2. (Withdrawn) The method of claim 1 wherein the adhesive pads are defined by cutting the adhesive layer without cutting through the wafer.

3. (Withdrawn) The method of claim 1 further comprising selectively treating the adhesive layer to yield a first adherence between the mounting member and second surfaces of the adhesive pads and a second, greater adherence between the mounting member and the remainder of the adhesive layer.

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4. (Withdrawn) The method of claim 1 further comprising positioning a mask between the adhesive layer and a radiation source.

5. (Withdrawn) The method of claim 4 further comprising delivering radiation through the mask to selectively expose either the adhesive pads or the remainder of the adhesive layer.

6. (Withdrawn) The method of claim 5 wherein the radiation exposure is selected to alter adhesion between the adhesive layer and the mounting member such that the mounting member is less adherent to the adhesive pads than to the remainder of the adhesive layer.

7. (Withdrawn) The method of claim 4 further comprising delivering radiation through the mask to selectively expose the adhesive pads, thereby reducing adhesion of the adhesive pads to the mounting member.

8. (Withdrawn) The method of claim 1 wherein the back surface of each microelectronic component has a surface area greater than a contact area of the adhesive pad in contact with the back surface.

9. (Withdrawn) The method of claim 1 wherein dicing the wafer comprises cutting through the wafer to a depth spaced from the mounting member.

10. (Withdrawn) The method of claim 1 wherein separating the microelectronic components and their attached adhesive pads exposes an adhesive surface of the adhesive pad, the method further comprising attaching the exposed adhesive surface of an adhesive pad to an active surface of a microelectronic component mounted on a substrate.

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11. (Currently Amended) A method of applying adhesive pads to a plurality of microelectronic components, comprising:

applying an adhesive layer on at least a portion of a rear surface of a microelectronic wafer, the microelectronic wafer comprising a plurality of microelectronic components, each of which has a back surface;

defining a plurality of separable, spaced-apart adhesive pads within the adhesive layer, each of the microelectronic components having an adhesive pad attached to its back surface with the adhesive pad covering less than the entire back surface; and

singulating the microelectronic components by cutting through the wafer without cutting through an entire thickness of the adhesive layer.

12. (Original) The method of claim 11 wherein the adhesive pads are defined by cutting the adhesive layer without cutting through the wafer.

13. (Original) The method of claim 11 further comprising separating the microelectronic components and their associated adhesive pads from a remainder of the adhesive layer.

14. (Original) The method of claim 11 further comprising positioning a mask between the adhesive layer and a radiation source.

15. (Original) The method of claim 11 further comprising contacting the adhesive layer with a mounting member prior to singulating the microelectronic components.

16. (Original) The method of claim 15 further comprising selectively treating the adhesive layer to yield a first adherence between the mounting member and second surfaces of the adhesive pads and a second, greater adherence between the mounting member and the remainder of the adhesive layer.

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17. (Currently Amended) The method of claim ~~45~~11 further comprising positioning a mask between the adhesive layer and a radiation source and separating the microelectronic components and their associated adhesive pads from a remainder of the adhesive layer.
18. (Currently Amended) The method of claim ~~47~~15 further comprising positioning a mask between the adhesive layer and a radiation source and delivering radiation through the mask to selectively expose the adhesive pads, thereby reducing adhesion of the adhesive pads to the mounting member.
19. (Original) The method of claim 17 further comprising delivering radiation through the mask to selectively expose either the adhesive pads or the remainder of the adhesive layer.
20. (Currently Amended) The method of claim 19 wherein the radiation exposure is selected to alter adhesion between the adhesive layer and ~~the~~a mounting member such that the mounting member is less adherent to the adhesive pads than to the remainder of the adhesive layer.
21. (Original) The method of claim 11 further comprising contacting the adhesive layer with a mounting member after defining the adhesive pads and prior to singulating the microelectronic components.
22. (Original) The method of claim 11 further comprising contacting the adhesive layer with a mounting member prior to singulating the microelectronic components, singulating the microelectronic components comprising cutting through the wafer to a depth spaced from the mounting member.
23. (Original) The method of claim 11 wherein singulating the microelectronic components comprises dicing the wafer.

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24. (Cancelled)

25. (Original) The method of claim 11 wherein the adhesive pad of each singulated microelectronic component has an exposed adhesive surface, the method further comprising attaching the exposed adhesive surface of an adhesive pad to an active surface of a microelectronic component mounted on a substrate.

26. (Currently Amended) A method of assembling a stacked microelectronic component assembly, comprising:

attaching a first microelectronic component to a substrate with an active surface of the first microelectronic component oriented away from the substrate;

applying an adhesive layer on at least a portion of a rear surface of a microelectronic wafer;

defining a plurality of spaced-apart adhesive pads and a remainder within the adhesive layer;

dicing the wafer into a plurality of second microelectronic components, each microelectronic component having a back surface to which at least one of the adhesive pads is attached, the adhesive pad covering less than the entire back surface to which it is attached;

thereafter, removing one of the second microelectronic components with its attached adhesive pad, leaving the remainder of the adhesive layer; and

attaching one of the removed second microelectronic components component to the first microelectronic component by contacting the active surface of the first microelectronic component with the adhesive pad attached to the second microelectronic component.

27-49. (Cancelled)

50. (New) The method of claim 26 wherein removing one of the second microelectronic components further comprises leaving at least a remaining one of the plurality of second microelectronic components attached to the remainder of the adhesive layer.

51. (New) The method of claim 26 wherein the adhesive pads and the remainder are defined by cutting the adhesive layer without cutting through the wafer.

52. (New) The method of claim 26 further comprising positioning a mask with respect to the adhesive layer and delivering radiation through the mask to selectively expose either the adhesive pads or the remainder of the adhesive layer, wherein the radiation exposure is selected to alter adhesion between the adhesive layer and a mounting member such that the mounting member is less adherent to the adhesive pads than to the remainder of the adhesive layer.

53. (New) The method of claim 26 further comprising contacting the adhesive layer with a mounting member after defining the adhesive pads and prior to dicing the wafer.

54. (New) The method of claim 26 further comprising contacting the adhesive layer with a mounting member prior to dicing the wafer, dicing the wafer comprising cutting through the wafer to a depth spaced from the mounting member.

55. (New) The method of claim 26 wherein dicing the wafer comprises cutting through the wafer without cutting through an entire thickness of the adhesive layer.

56. (New) A method of applying adhesive pads to a plurality of microelectronic components, comprising:

applying an adhesive layer on a microelectronic wafer, the microelectronic wafer comprising a first microelectronic component and a second

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microelectronic component, each of which has a back surface in contact with the adhesive layer;
cutting the adhesive layer, without cutting through the wafer, to define separable, spaced-apart first and second adhesive pads, the first adhesive pad being attached to the back surface of the first microelectronic component and the second adhesive pad being attached to the back surface of the second microelectronic component, wherein the first adhesive pad covers less than the entire back surface of the first microelectronic component and the second adhesive pad covers less than the entire back surface of the second microelectronic component; and
singulating the microelectronic components.

57. (New) A method of applying adhesive pads to a plurality of microelectronic components, comprising:

applying an adhesive layer on a microelectronic wafer, the microelectronic wafer comprising a first microelectronic component and a second microelectronic component, each of which has a back surface in contact with the adhesive layer;

defining separable, spaced-apart first and second adhesive pads within the adhesive layer, the first adhesive pad being attached to the back surface of the first microelectronic component and the second adhesive pad being attached to the back surface of the second microelectronic component, wherein the first adhesive pad covers less than the entire back surface of the first microelectronic component and the second adhesive pad covers less than the entire back surface of the second microelectronic component;

after defining the first and second adhesive pads, contacting the adhesive layer with a mounting member; and

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after contacting the adhesive layer with the mounting member, singulating the first and second microelectronic components by cutting through the wafer to a depth spaced from the mounting member.